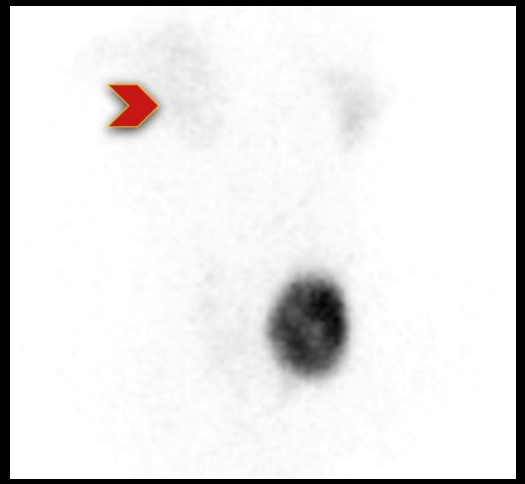
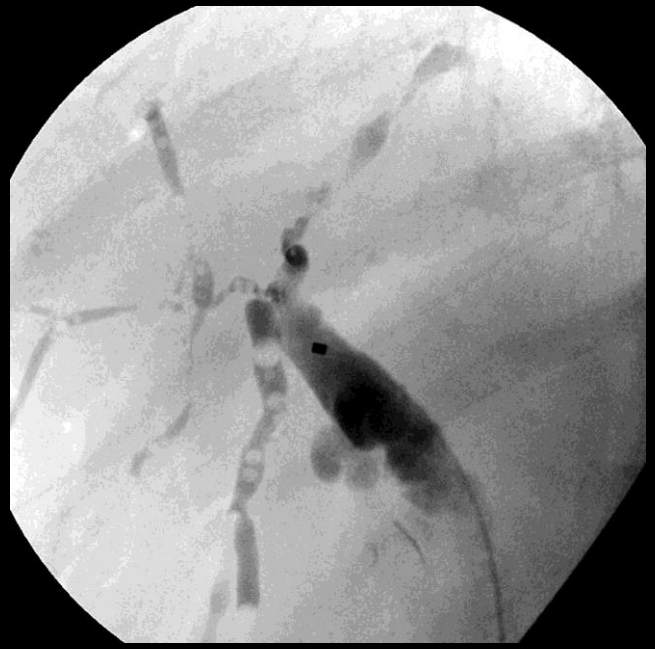
High Yield Medicine Review: GI and Endocrine

By Quinn, Jackson, Mike



Case courtesy of Arshdeep Sidhu, Radiopaedia.org, rID: 21950



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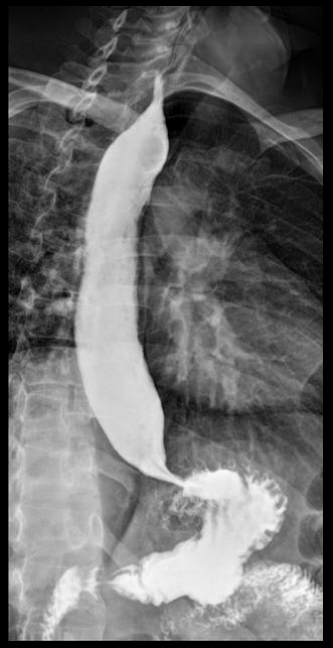

Niknejad M, Achalasia. Case study, Radiopaedia. https://doi.org/10.53347/rID-89229

Strudel GI and Endocrine Review

By Quinn, Jackson, Mike

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45-year-old man presents with abdominal fullness and altered mental status. He drinks 6-7 beers nightly for the last 25 years. Exam significant for scleral icterus, spider angiomas, jaundice, distended abdomen with positive fluid wave. Neuro exam significant for "flapping" tremor with extension of wrists with arms in full extension. Most likely dx?
Alcoholic cirrhosis; hepatic encephalopathy

Tx for this patient?
Lactulose (form NH4+ preventing systemic absorption), rifaximin (reduces colonic bacteria)

What is likely cause of his ascites? How can we confirm?
Portal HTN; SAAG(serum ascites – albumin gradient) >1.1

Same patient presents with hematemesis. Dx?
Esophageal Varices

Pathophys?
Portal hypertension, pooling of blood in the sub-mucosal veins of the distal esophagus
Tx/management?
"2 large bore IVs", Octreotide, IV abx, EGD (band ligation, ballon tamponade if unstable)

Patient with recurrent esophageal varices, refractory to above treatments?
TIPS

Other related findings?
Caput medusa, internal hemorrhoids, hypersplenism

Screening recommendations for this patient?
HCC q6m – US and alpha fetoprotein , varices - EGD

45-year-old man presents with new onset abdominal pain. He drinks 6-7 beers nightly for the last 25 years. Exam shows a distended abdomen which he states is worse than usual. There is dullness to percussion over the flanks. Temp 100.4. HR 110. Dx?
Spontaneous bacterial peritonitis

Peritoneal fluid analysis is done. Findings?
>250 neutrophils

40-year-old woman presents with acute onset RUQ pain. She is jaundiced and abdomen is diffusely tender to palpation. PMH significant for hypothyroidism. Labs significant for INR of 2.1, bilirubin 2.5, 1.0 direct, glucose of 65. ALT and AST both >1000. Positive anti-smooth muscle antibody. Most likely dx?

Autoimmune Hepatitis

What else can cause acute liver failure?
Most common: Acetaminophen overdose (glutathione depletion, NAPQI buildup), acute viral hepatitis
Shock, budd chiari, sepsis

What lab finding above is most indicative of liver FAILURE?
INR >1.5 (synthesis defect), also AMS

Child Pugh score components?
Ascites, bilirubin, encephalopathy, INR, albumin
Estimates hepatic reserve in liver failure-determines transplant
Predicts mortality, morbidity

Ascites fluid rapid review. Dx?
Bloody
Trauma, malignancy

Milky/white
Chylous, triglycerides, intra abdominal lymphoma

Ascites protein = 3.5
CHF, TB

Ascites protein = 1.8
Cirrhosis, nephrotic syndrome

Amylase = 1,200 IU/L
Pancreatic ascites

Patient with joint pain and swelling, x-ray show chondrocalcinosis. Hx of diabetes, bronze skin.
Hemochromatosis
Labs/tx?
Iron studies, serial phlebotomy

Kayser-Fleischer rings, resting tremor, bradykinesia, depression?
Wilson's
Labs?
Serum ceruloplasmin, urine copper excretion
Tx?
Chelating agents (penicillamine, zinc, transplant)

35 year old woman with elevated LFTs. PMHx significant for wheezing and SOB. X-ray shows flattened diaphragms with increased basilar radiolucency. No smoking hx.
Alpha 1 antitrypsin

Hepatic steatosis on liver biopsy, elevated ALT and AST, AST:ALT ratio is 1.2, no hx of alcohol use. BMI 45.
NASH
Pathophys?
Insulin resistance

30 year old man with RUQ pain, jaundice, NV. Returned from a vacation in Mexico 2 weeks ago.
Hep A

A 47-year-old woman comes to the clinic with fever, abdominal pain, fatigue. LFTs are elevated Positive HBsAg, Anti-HBc. Dx
Acute Hep B
What if negative HBsAg, Postive Anti HBs, Positive Anti-HBc
Resolved infection
Vaccine = negative HBsAg, Postive Anti HBs, negative Anti-HBc

Patient with fatigue, malaise, arthralgias, palpable purpura, Labs show low C4 and elevated RF. HCV +
Cyroglobulinemia - Hep C

28-year-old primagravid woman at 22 weeks. Returned from Africa 3 weeks ago. Exam shows jaundice, asterixis. Labs: INR=2.0, AST 4,300, ALT 3500.
Hep E

25 yo woman on OCPs. US shows solitary, well demarcated, heterogenous mass.
Hepatic adenoma

Well demarcated, homogenous mass with hyperechoic center.
Focal nodular hyperplasia

Solitary liver mass in a patient from asia. Hx of consuming improperly stored rice.
HCC – aflatoxin
Additional risk factors
Cirrhosis, Chronic hepatitis,

Patient undergoes CT for RUQ pain. Liver shows multiple liver masses. Dx?
Mets
Most common sites?
GI (portal vein), lung and breast

39-year-old man presents with fever, fatigue, and chills for one week. Reports dull RUQ pain. Temp 104. Labs: WBC 17,000, AST 75, ALT 105.
Pyogenic Liver abscess

Patient with RUQ, nausea vomiting, and bloody diarrhea. They travel internationally frequently for work. Ultrasonography of the abdomen shows a 4-cm round, hypoechoic lesion in the right lobe of the liver
Entameoba histolytica

Patient with hepatomegaly. US shows multiple anechoic well circumscribed cysts with egg shell calcifications.
Echinococcosis (risk of anaphylaxis)

40 year old man with hematochezia, tenesmus. Exam shows uveitis and erythema nodosum. Dx

Ulcerative colitis

Other symptoms?

Constitutional, skeletal (ankylosing spondylitis), PSC

Endoscopy findings?

Inflamed, edematous, ulcers

Biopsy is performed. Likely findings?

Crypt abscesses, neutrophil infiltration

Tx

5-ASA (mesalamine), can add steroids

24 year old college student with recurrent abdominal pain, bloating, loose stools. Worse when she gives presentations in class. Improves after defecation. Dx?

Irritable bowel syndrome (IBS)

Tx

Dietary modification low FODMAP diet

Fiber (psyllium), loperamide

Red flag symptoms

Nighttime diarrhea, fever, bloody stools, weight loss

Patient with cramping abdominal pain, bloating and diarrhea worsens after eating yogurt in the morning. Next step in confirming dx?

Lactose intolerance

Hydrogen breath test, increased stool osmotic gap

27 yo man presenting with fever, fatigue, and weight loss. Exam demonstrated RLQ tenderness. Hgb 10.8. Dx

Crohn disease

Endoscopy findings?

Skip lesions, cobblestoning

Biopsy findings?

Noncaseating granulomas, transmural inflammation

Tx

Steroids for acute flares , add TNF alpha inhibitors for maintenance therapy

Complications

Strictures, mal-absorption, fistulas

Same patient presents with severe abdominal pain and distension, vomiting, and hematochezia. T: 102, HR: 105, WBC 15,000. Dx?

Toxic megacolon

Tx

NPO, NG tube, abx, steroids (IBD), surgery if no improvement or peritonitis. NO COLONOSCOPY

31 yo woman presents with recurring diarrhea and abdominal pain. Skin exam shows pruritic, blistering rash on her knees. PMHx of Hashimotos thyroiditis.

Labs
IgA tissue transglutaminase antibody
- Also get IgA levels due to IgA deficiency

Biopsy finding?
Villous atrophy

Rapid review of diarrhea

Diarrhea, arthralgias, new heart murmur, ataxia, biopsy shows PAS-positive macrophages
Whipple disease

Chronic watery diarrhea, abdominal pain and weight loss. Colonoscopy unremarkable.
Microscopic colitis

Diarrhea, hx of gastrectomy. + lactulose breath test
Small intestinal bacterial overgrowth

4 watery stools a day. Recent clindamycin use.
C. Diff
Tx
Oral fidoxomicin or vancomycin
Fulminant – vancomycin + metronidazole

45 year old man presents with colicky abdominal pain and significant distension. He reports multiple episodes of vomiting and has not had a BM. PMHx significant for previous cholecystectomy and appendectomy. Dx

SBO

Tx

Surgery – peritonitis

NPO, NG tube if uncomplicated

65 year old man with weight loss, fever, night sweats. CBC 10.9. Fecal occult blood + DX

Colon cancer

Screening guidelines?

45/50 in average risk then every 10

If first degree relative (age 40 or 10 year before family diagnosis)

Younger patient with >100 polyps on colonoscopy? Dx

Familial adenomatous polyposis. Screen at age 10-15, prophylactic proctocolectomy.

Patient with colon cancer. Mutation in DNA mismatch repair genes. Dx

Lynch syndrome

Screening guidelines

Colonoscopy (starting at age 20 every 1-2 years)

Upper endoscopy

Prophylactic hysterectomy and salpingo-oophorectomy (endometrial biopsy

Diarrhea Classifications

Patient presents with blood, mucus, microscopy shows leukocytes present. Type?
Inflammatory diarrhea
Associations
Crohns, UC, Infections (shigella, entamoeba, etc.)

Patient presents with bulky, foul smelling, oily. Type?
Steatorrhea
Causes (x2)
Malabsorption (whipple, SIBO, ileal resection)
Pancreatic insufficiency

How do we differentiate?
D-xylose absorption test – normally absorbed and excreted by kidneys
Administer d-xylose and measure urine or serum levels
Low levels in malabsorptive disorders that damage intestinal mucosa
Normal or elevated in enzyme deficiencies

Watery diarrhea with osmotic gap <50 mmol/L. Type?
Secretory diarrhea
Increased secretion and inhibition of water absorption (vibrio, endocrine tumors)

Watery diarrhea osmotic gap 120 mmol/L
Osmotic diarrhea
Osmotic pull of ingested material pulls in water (celiac disease)

Acid base disorder associated with severe diarrhea?
NAGMA
Bicarbonate loss

GI Bleed

Hematemesis or melena. Source and next step.
Upper - EGD – followed by colonoscopy
Angioembolization if unstable

Hematochezia. Source and next step
Lower - Colonoscopy

70 yo man with A-fib and CAD presents with severe abdominal pain, NV and bloody diarrhea. Abdominal exam is relatively normal.
Acute mesenteric ischemia

Painless bright red blood. Low fiber diet
Diverticulosis

Painless bright red blood. Hx of constipation.
Internal hemorrhoids
External – painful

Severe pain with BM. Minimal blood on toilet paper
Anal fissures

65 yo woman with episodic hematochezia. Hx of von willebrand disease, arotic stenosis, and end stage renal disease. Hgb 10.5
Angiodyplasia – degenerative disorder of the GI vessels

47 yo man LLQ pain. Increased urinary urgency. US shows WBC but no bacteria. T: 100.1 Dx?
Diverticulitis
Tx uncomplicated
NPO, abx
Tx peritonitis, abscess
Surgical vs CT drainage

Complications
Recurrent episodes (may require prophylactic colon resection)
colovesical fistula

65 yo male with significant CAD is admitted following a AAA repair. The patient develops severe abdominal pain and bloody diarrhea. Dx
Ischemic colitis

Toxidromes

Early: Metabolic acidosis Late: metabolic acidosis with respiratory alkalosis
ASA

21 y/o suicide attempt found unresponsive with empty vial. AST, ALT>1000. Last known well 10 hrs go.
Acetaminophen toxicity
Tx?
Activated charcoal within 4 hr, NAC, refer for liver transplant

Blue line over gum line, abdominal pain, tingling sensation in fingers and toes, works as mechanic.4/5 strength foot dorsiflexion and writst extension. Basophilic stipping and anemia on labs.
Lead poisoning
Tx?
Succimer (DMSA), Dimercaprol, EDTA

45-year-old man found on bench, history of alcohol use disorder. Reports significant flank pain. Labs show AGMA. Dx?
Ethylene glycol toxicity
Tx?
Fomepizole

Microbiologist brews his own beer, now presents with eye pain and vision changes. Exam shows blurred optic disk margins. Labs significant for anion gap metabolic acidosis.
Dx?
Methanol poisoning
Tx?
Fomepizole

40-year-old farmer presents with 1-day hx loose stools, dizziness, vomiting, excessive sweating, urinary frequency, sweating. Dx?
DUMBBELSS (hypersecretion-diarrhea, urination, miosis, bronchospasm, brady cardia, emesis, lacrimation, sweating, salivation)
Cholinergic toxicity
Tx?
Atropine, pralidoxime for nicotinic effects

Pupils 1 mm, patient unresponsive. Dx, tx?
Opioid toxicity, naloxone (x3)

25-year-old MMA fighter with chest pain, aggression, dilated pupils, hypertension for last 2 hours.
Cocaine toxicity- sympathomimetic

Hypothyroid

40-year-old woman no significant PMH presents with 1 month history of depressed mood and fatigue. She has a 10 lb weight gain despite eating less over the last 6 months, constipation, notes brittle hair and "puffier" skin. Exam shows 4/5 patellar reflexes bilaterally. There is diffuse moderate enlargement of the thyroid without tenderness. Next step?

Obtain TSH

TSH is significantly elevated (>4). Dx, Tx?

Primary thyroid insufficiency, T4 (levothyroxine)

Should we do biopsy?

No

What is MCC in US?

Hashimoto (autoimmune)

What if she didn't have sx?

Subclinical hypothyroidism

Hashimoto's predisposes to what cx?

Marginal zone lymphoma (MALToma)

Findings in secondary thyroid insufficiency?

Low/normal TSH and low T3/T4, will also often see signs of low cortisol

Patient with hx hypothyroid now has AMS, Bp 80/50, Temperature 96 F. Dx?

Myxedema coma

Next step?

Warmed IVF, blanket, IV T4

45-year-old woman presents with 2-week history of heart palpitations, restlessness, trouble sleeping, and anxiety. Exam reveals sinus tachycardia, HTN, periorbital soft tissue expansion, lid lag, and nonpitting edema of lower extremities. Dx, next step?

Graves, TSH/thyroid studies

Cause?

TSH receptor antibodies

Then?

RAIU

What causes exophthalmos?

TSH receptor antibodies stimulate fibroblast expansion

Does this improve with radioactive iodine ablation?

No, worsens

Tx of exophthalmos?

Steroids

What bone pathology does hyperthyroid predispose to?

Osteoporosis-increased bone turnover

What causes increased metabolic rate; HTN in hyperthyroidism?

Increase Na/K channel activity (ATP channel); increased catecholamine responsiveness

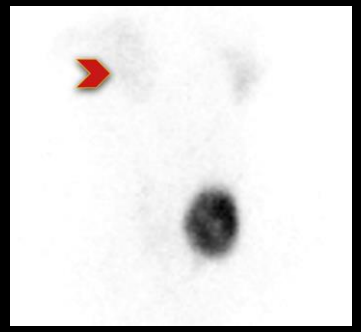
Pt receives amiodarone and has infection now has significant elevated fever, tachyarrhythmia, agitation, altered mental status. Dx?

Thyroid storm (Job-Basedow phenomenon)

Tx?

4 Ps: propranolol, PTU, prednisolone, Potassium iodide (Wolf-Chaikoff)

Elevated free T3/T4, see focal uptake on RAIU:



Case courtesy of Arshdeep Sidhu, Radiopaedia.org, rID: 21950

Toxic adenoma

1 week post URI, patient with painful thyroid goiter and hyperthyroid?

Subacute (De Quervain) thyroiditis

1 week post URI, patient with painLESS thyroid and hyperthyroid?

Silent thyroiditis

What abx can be positive?

TPO antibody

Tx?

Supportive-usually transient hyperthyroid then hypothyroid phase to euthyroid

Adrenal

40 year old woman presenting with 6 month history of weight gain, amenorrhea, easy bruising, "stretch marks" over abdomen. Exam significant for purple striae, central obesity, HTN. Dx?

Cushing's syndrome

Next steps?

Check meds

Common causes of Cushing's syndrome?

Iatrogenic, pituitary adenoma, adrenal adenoma, ectopic ACTH production

First line testing (3)?

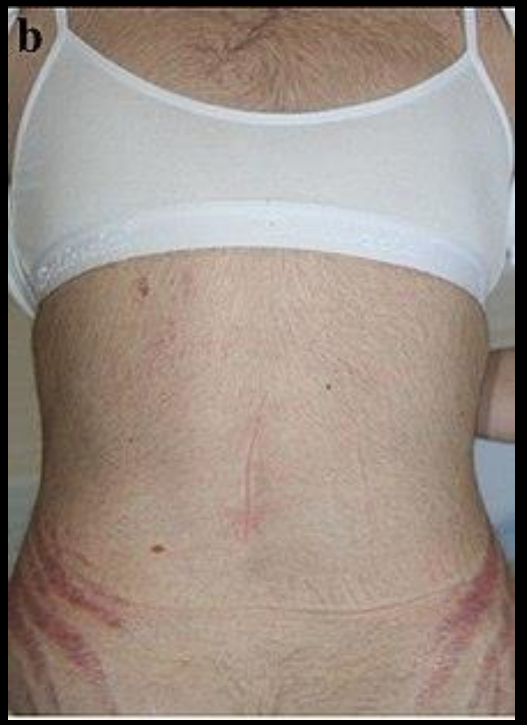
Dexamethasone suppression, 24 hours free urine cortisol, ACTH level

How many need to be positive?

2

Tx?

Depends on etiology



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Patient with hx SLE on chronic steroids has TKA (elective surgery). In the OR, she develops hypotension refractory to fluid bolus. Next step?

Hydrocortisone

Dx?

Tertiary adrenal insufficiency

Does secondary adrenal insufficiency result in electrolyte abnormalities?

Not normally, low ACTH production is enough for aldosterone production-hyperkalemia seen more w/ primary adrenal insufficiency

17 year old boy presents with 2 weeks of increased thirst, polyuria, 10 lb weight loss over the last 6 months. PMH significant for vitiligo. BMI 17, PE shows dry mucus membranes. Likely Dx?
Type 1 Diabetes Mellitus
Pathophys?
Autoimmune destruction of B cells in pancreas (>90% destruction)
Labs for diabetes dx?
Random glucose, fasting, A1c

Same patient presents 6 months later with 1 day hx nausea, abdominal pain, vomiting, fatigue, and altered mental status. He recently had rhinorrhea, cough that resolved but he didn't take his insulin during this time. Likely dx?
DKA
Pathophys?
Lack of insulin-excessive buildup of glucose, ketones 2/2 unopposed glucagon
Next step?
Isotonic fluids, insulin, EKG, infectious workup (UA, BC, CXR)
What electrolyte should you watch?
K-both hyperkalemia and hypokalemia
Onset takes?
Hours-day
Neuro complication in kids?
Cerebral edema

Regimen?
Fluids: Isotonic NS until glucose <200 then D5W
Insulin: IV insuilnl, then subQ when anion gap closes and tolerate PO, overlap 2hr
K: IV K when <5.2, ensure cardiac protection if EKG changes
Phos: keep >1.0
HCO3-: consider if PH<6.9 (controversial)

36 yo man does not regularly see PCP, BMI 40. BP 145/90. Excluding lipid studies and f/u of HTN, what should you screen in this pt?
Prediabetes, diabetes
USPTF recently lowered age to 35
Consider earlier screening in patients with risk factors including FH, obesity, hx gestational diabetes
Screening tests?
Fasting (126), random glucose (>200), A1c (>6.5)-Medicare
A1c returns 6.9. Dx?
Likely T2DM
Pathophys?
Insulin resistance, free FA can contribute
Next step?
Diet and exercise, metformin
Hospital admission-what to do with metformin and why?
D/c metformin in hospital, risk of lactic acidosis
What is A1c goal in diabetes?
<7
Why?
Tighter glycemic control has increased risk mortality
Most common insulin regimen overall?
Basal-bolus

Diabetes Complications

MCC mortality in diabetes?
MI
Macrovascular?
CAD, PAD, CVA
Lower BP goal (130/80) and lower target LDL (<100)

Microvascular Cx?
Renal: microalbuminuria, proteinuria
Screening test?
Microalbuminuria/creatinine ratio
How often?
Annually
HTN and diabetic nephropathy?
ACE/ARB
Histology finding?
Mesangial thickening, glomerular sclerosis, BM thickening, nodular sclerosis (Kimmestiel Wilson)

Ophtho?
Retinopathy-screen with optho annually
Tx?
Laser coag

Neuro?
Neuropathy-diabetic foot, charcot joint. Testing?
Home and office foot checks, monofilament testing

CN III palsy PE?
Ischemia of CN III (inside) but not parasympathetics (pupils)

Feeling of fullness after eating, chronic DM?
Gastroparesis
Tx?
Diet changes (low fat), metoclopramide

Burning and tingling in hands and feet?
Small fiber neuropathy
Tx?
Gabapentin, tight glycemic control, capsaicin

Patient with BMI >40 and T2DM and failed exercise and diet?
Consider bariatric surgery

Diabetes Meds

First line oral diabetes med (for T2DM):
Metformin MOA?
Inhibits gluconeogenesis, increases insulin sensitivity
Side effects?
Lactic acidosis in renal failure, AKI
Weight loss

Sulfonylureas (2nd gen) MOA?
K+ channel blocker in B cells, increases insulin release
Names?
Glipizide, glyburide
Side effects?
Hypoglycemia, weight gain

Thiazolidinediones (glitazones) MOA?
PPAR-y activation, increased insulin sensitivity in adipocytes
Side effects?
Exacerbate CHF, edema, weight gain, fx

GLP-1 (-tide) MOA?
Acts like endogenous GLP-1 (secretagogue w/ oral intake), increases (glucose dependent) insulin secretion
Side effects?
GI (nausea, vomiting), pancreatitis.
Weight loss, mortality benefit in CHF, earlier satiety
SubQ administration, expensive

DPP-4 (-gliptin) MOA?
Inhibit GLP-1 breakdown
Increases risk for infections: respiratory and UTI
Similar to GLP-1 benefits (weight loss, early satiety)
Expensive

SGLT2 (-flozin) MOA?
Block SGLT2 receptor in PCT
Side effects?
UTI, vulvar candidiasis, hypotension
Benefits in:
Weight loss, nephropathy, CHF (independent of glycemic control)
Expensive

Insulin:
First line in (4)?
Pregnancy, admitted patients, T1DM, T2DM A1c>10 or poorly controlled
Types?
Rapid acting (LAG): lispro, aspart, glulisine
Peak at about 2-3 hrs
Regular insulin:
Can give IV!
Use in hyperkalemia
Intermediate: NPH
70/30 mixture is 70% NPH 30% regular
4-10 hr peak
Long acting (detemir, glargine-lantus)
Basal insulin

Outpatient: Administer subQ
Inpatient: Cut home dose in half, use SSI with carb correction with long acting

Insulin dosing in exercise, surgery?
Decrease 1-2U with exercise, ½ dose day of surgery
Dosing with illness?
Regular dosing

Hypoglycemia

25 yo F presents with 3rd episode of tremors, sweating, palpitations. Her father has T2DM requiring insulin. POC glucose 50 mg/dL. Likely dx?

Facticious hypoglycemia

Dx?

C-peptide, insulin, serum glucose levels

What does C-peptide tell you?

If insulin was produced endogenously

What diabetes med can cause elevated C-peptide?

Sulfonylureas

How do we test this?

Urine screen

Tx for this patient?

Sugary foods (juice, candy), psych referral

Tx severe, symptomatic hypoglycemia in the field?

Glucagon (or when no IV available)

Alcoholic with hypoglycemia, severe AMS?

Administer B1 first, then IV dextrose

40 yo G4P4 with recurrent RUQ pain after eating fatty/spicy foods. Pain resolves spontaneously after 2 hours . BMI is 30, vital signs and physical exam in the ED are unremarkable. Most likely dx?

Symptomatic cholelithiasis (biliary colic)

Risk factors?

Obesity, Female, Multiparity/Pregnancy, Age >40, Malabsorption, TPN

Pathophys?

Fatty food triggers CCK release which leads to gallbladder contraction against an obstructed cystic duct

Same patient with: Temp 100.4, HR 110, abrupt arrest of inspiration with RUQ palpation.

Diagnosis?

Acute cholecystitis

Physical exam finding?

Murphy's sign

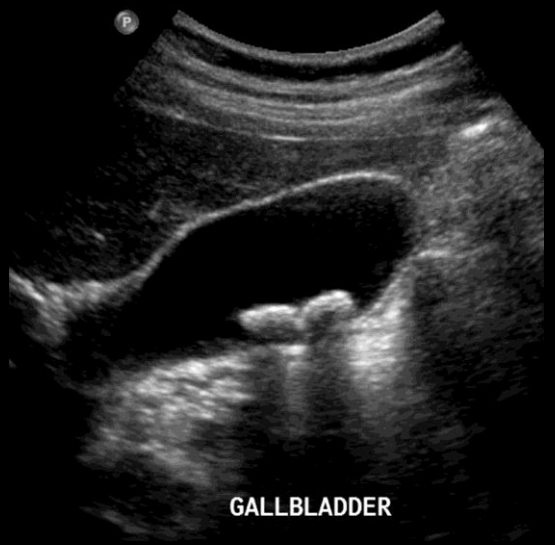
US findings?

Gallstones, Gallbladder wall thickening, pericholecystic fluid, sonographic Murphy's sign

Tx for both?

Elective cholecystectomy vs IV abx and urgent cholecystectomy

Case courtesy of Ian Bickle, Radiopaedia.org, rID: 57077



Case courtesy of Andrew Dixon, Radiopaedia.org, rID: 9558

Biliary (cont.)

31 yo G2P2 w/ RUQ discomfort and pruritus. Most likely Dx?

Primary biliary cholangitis

Pathophys?

Autoimmune destruction of INTRAhepatic bile ducts

Classic presentation?

Female, Fatigue, pruritus, RUQ pain, hepatomegaly, jaundice, dark urine.

Labs?

Cholestatic pattern

US findings?

Generally normal

Antibody?

Positive anti mitochondrial antibodies

Tx?

Ursodeoxycholic acid

40 yo male w/ RUQ pain. Temp: 100.4, exam shows scleral icterus. PMHx significant for hematochezia.

Dx?

Primary sclerosing cholangitis

Significance of the bloody stools?

Ulcerative colitis

Antibody?

pANCA

MRCP is preformed, what would we see?

Beads on a string, dilation/constriction of intra and extra hepatic bile ducts

Biopsy is done to confirm. What is the “classic” finding.

Onion skin fibrosis

Next step in management?

Colonoscopy (90% of patients with PSC have IBD)

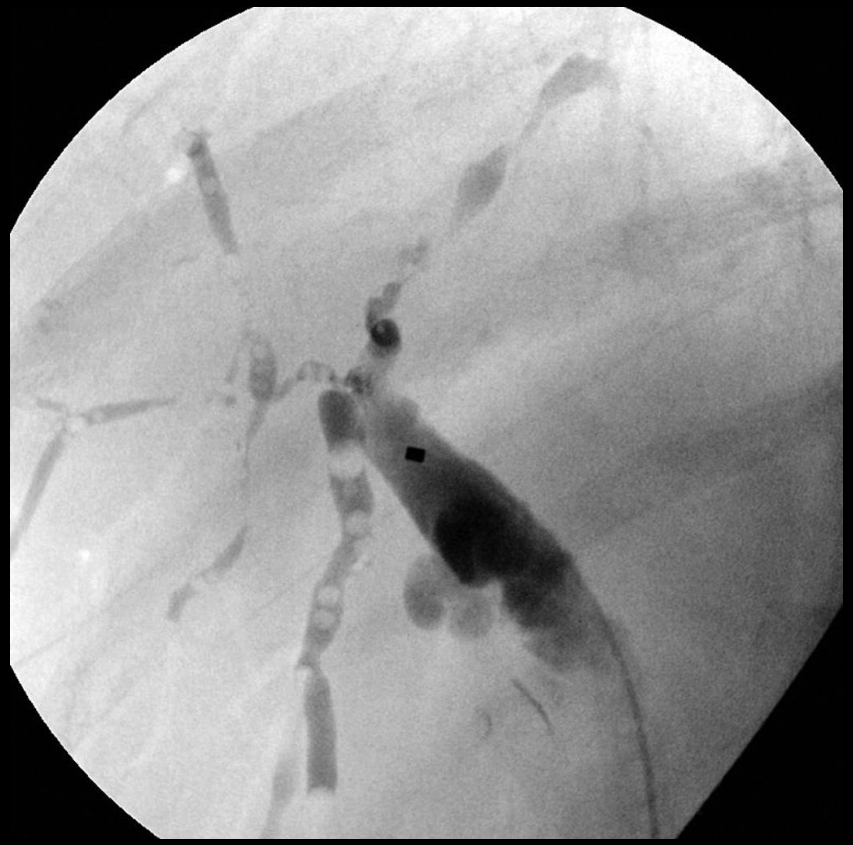
Ursodiol

ERCP with dilation of the strictures

Long term complications?

10-15% risk of cholangiocarcinoma

Primary Sclerosing Cholangitis



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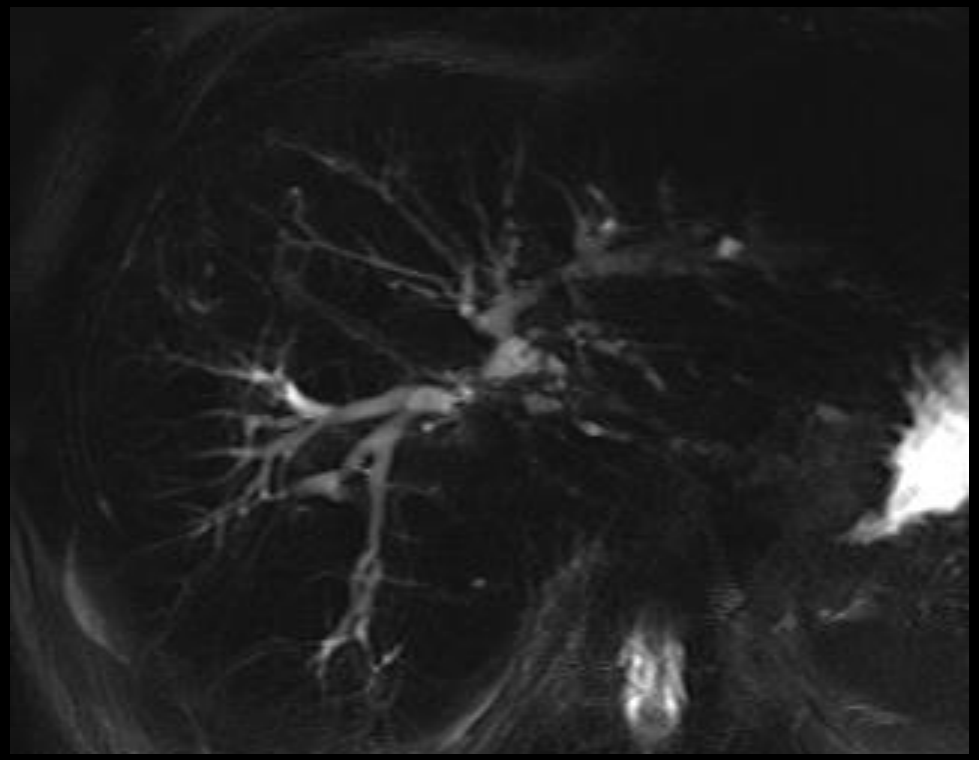


Case courtesy of Hani Makky Al Salam, Radiopaedia.org, rID: 14769

35 yo male presents with scleral icterus, Temp: 100.5, PE demonstrates tenderness to the RUQ on palpation. Most likely dx?

Acute cholangitis

Charcot's triad? Reynold's Pentad?

Jaundice, fever, RUQ pain, hypotension, mental status changes

Not sensitive (patients may have cholangitis w/o clinically obvious jaundice)

What if patient has similar symptoms, but no fever?

Choledocolithiasis

Causes of biliary obstructive jaundice?

Gallstones, malignancy (cholangiocarcinoma)

Why jaundice?

Build up of conjugated (direct) bilirubin in the liver and blood. Filtered by kidneys – dark urine (conjugated bili is water soluble)

Labs and imaging?

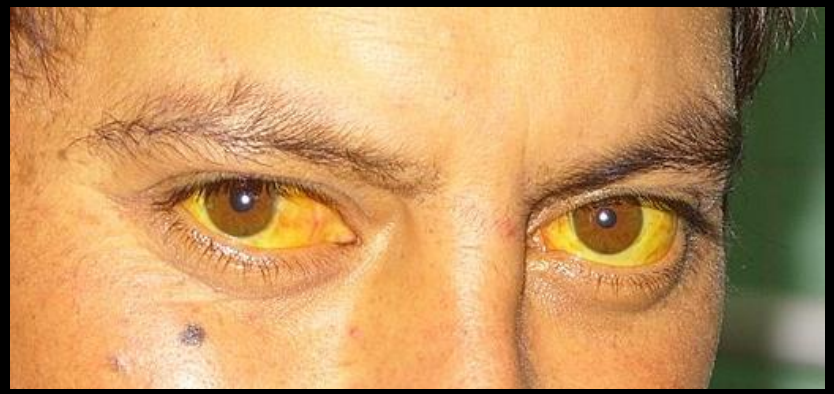
Elevated WBC, Elevated bilirubin (direct), Cholestatic pattern (Alk Phos > AST/ALT)

US –common bile duct dilation (may seen biliary stones – not very sensitive)

Tx?

IV abx, ERCP

- Followed by cholecystectomy if cholelithiasis is present



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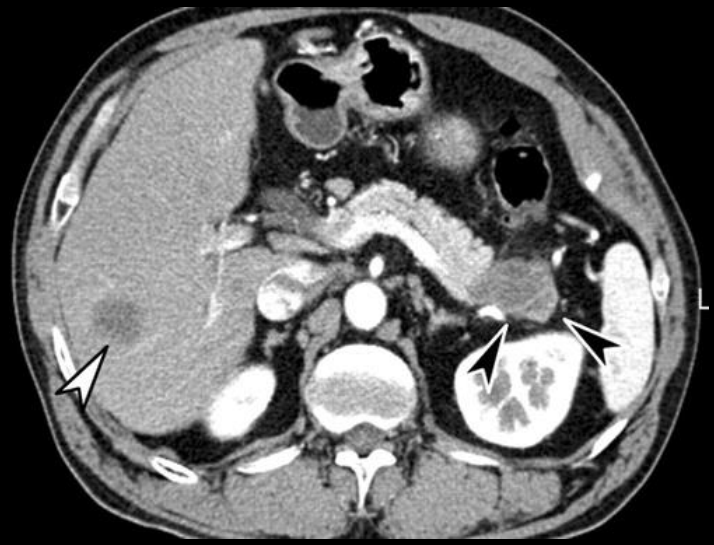
41 year old woman presents with severe epigastric pain with associated N/V. She has had similar episodes of pain in the past associated with fatty meals.

Dx?
Acute gallstone pancreatitis
Pathophys?
Intrapancreatic activation of enzymes due to obstruction (gallstone)
Direct injury to pancreatic acinar cells (alcohol)
Common causes
Gallstone (40%), alcohol (30%), hypertriglyceridemia drugs (steroids, diuretics, valproate), trauma
I GET SMASHED
Classic clinical features?
Epigastric pain radiating toward the back
Worse after meals, N/V.
Physical exam?
Epigastric tenderness
Do we need imaging?
Not necessarily. Clinical diagnosis
2/3 to make diagnosis
Classic abdominal pain
Pancreatic enzymes >3x normal
- Lipase, amylase
CT imaging findings
What is more sensitive/specific?
Lipase

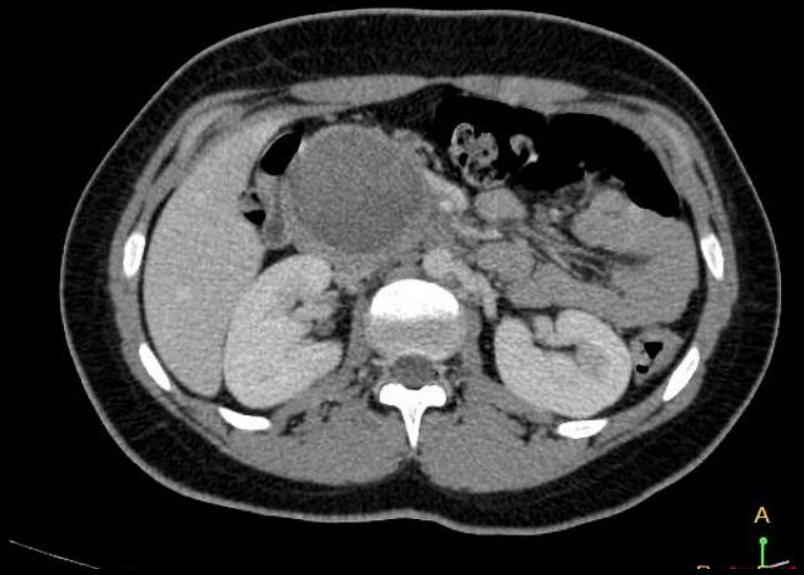
Characterisitc CT findings
Parenchymal edema
Fat stranding
Peripancreatic free fluid
Tx
IV fluids
Pain control
Manage underlying pathology
Perform chole during that hospitalization

Systemic
ARDS, Pleural effusion, Sepsis, DIC

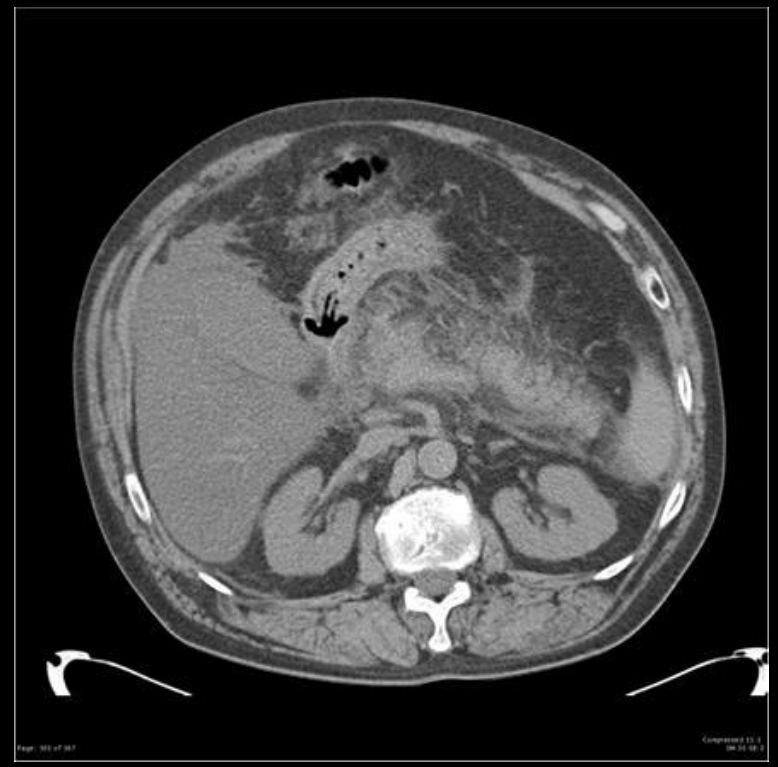
Pancreatic CT imaging (https://radiopaedia.org)



Pancreatic adenocarcinoma



Pancreatic pseudocyst



Acute pancreatitis (fat stranding)

65-year-old man with a history of significant alcohol use. Presents with recurrent abdominal pain, diarrhea, and recent night blindness? Dx?

Chronic pancreatitis

Pathophys?

Chronic inflammation and autodigestion of pancreatic tissue w/ progression to fibrosis.

Risk factors?

Chronic alcohol use (most common), tobacco, hypertriglyceridemia.

Genetic risk factor?

Cystic fibrosis

Significance of the GI symptoms and night blindness?

Exocrine enzyme deficiency

- Steatorrhea
- Malabsorption of fat-soluble vitamins (D, A, K, E)

Dx

CT

Imaging findings?

Pancreatic ductal dilations

Calcifications

Pancreatic function tests

- Fecal elastase -1
  - <100 = exocrine insufficiency
- Direct measurements
  - Give cerulein (CCK analog) and secretin
  - Measure enzyme levels

Tx

Enzyme replacement

Pain control

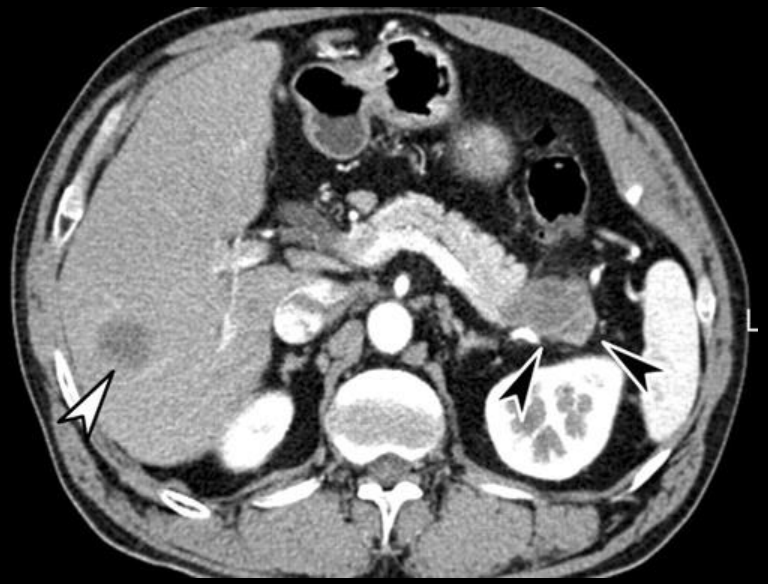
- Celiac ganglion block

Manage underlying conditions (e.g. alcohol abstinence)

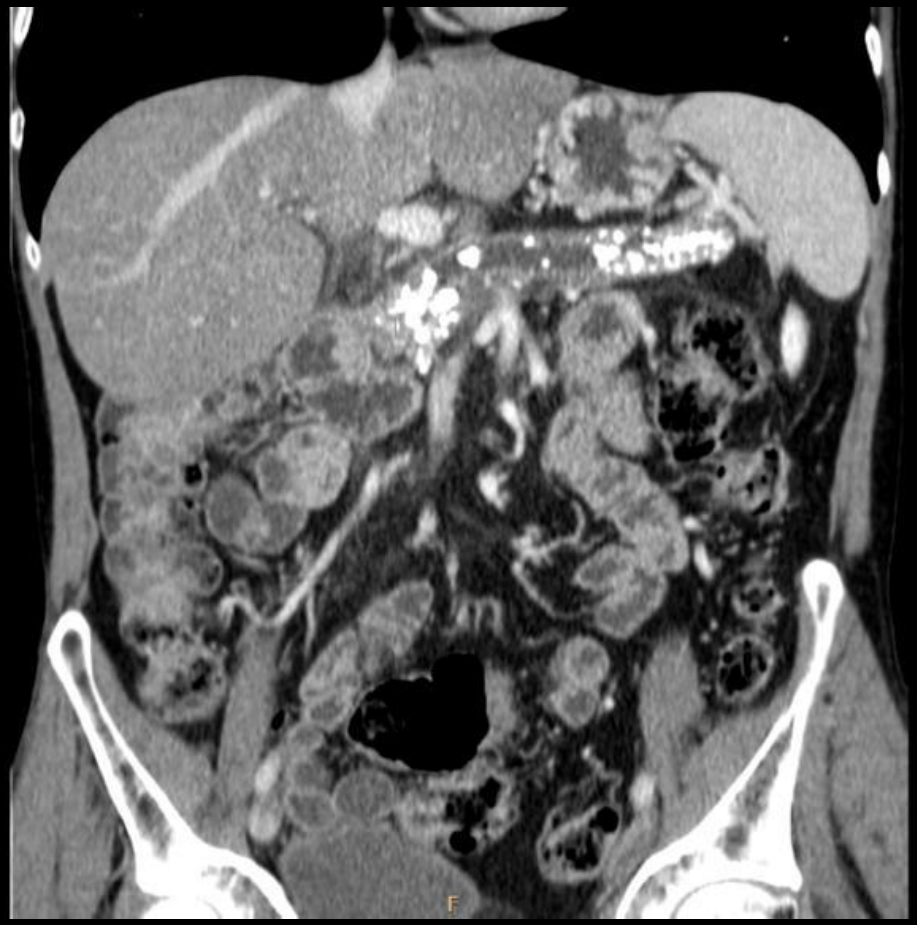
Complications

- Pseudocyst
- Pancreaticogenic diabetes
- Malabsorption
- Ascites
- Pancreatic adenocarcinom

Pancreatic CT imaging



Adenocarcinoma



Chronic pancreatitis (ductal dilation + calcifications)

(https://radiopaedia.org)

70 yo female w/ a 50 pack-year smoking history presents to the clinic for routine checkup. Physical exam shows jaundice and nontender RUQ mass.

Dx?

Pancreatic adenocarcinoma

Risk factors

Smoking history, chronic pancreatitis, high ETOH consumption, age >50

Classic clinical features?

Painless jaundice, epigastric pain, systemic sx (fatigue, weight loss, decreased appetite)

Physical exam findings?

Courvoisier sign – enlarged non tender gallbladder w/ painless jaundice

Trousseau sign – migratory thrombophlebitis (not to be confused w/ hypocalcemia)

Labs

CA 19-9 (marker of cancer progression)

CEA (less specific)

Imaging?

Abdominal CT

Tx?

Head

Whipple procedure

Tail

Resection of body/tail often w/ concomitant splenectomy

If unresectable?

Biliary stent and chemo

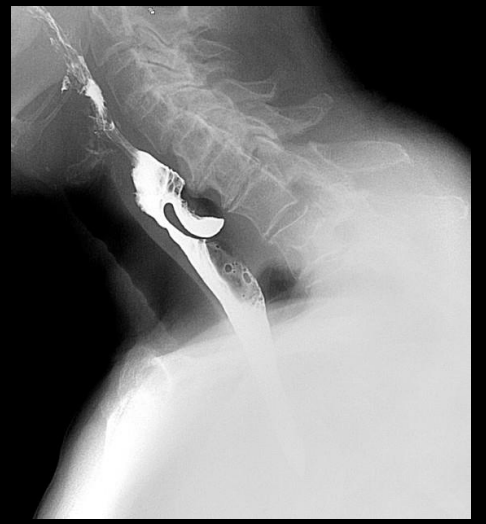
21 y/o college student was out at last night for their birthday. Multiple episodes of vomiting now with severe retrosternal pain. Crepitus is palpated.
Dx?
Esophageal perforation. Boerhaave syndrome
May also be secondary to recent upper endoscopy

Imaging
CXR – widened/pneumo mediastinum
Contrast esophagography (gold standard) – consider Gastrographin over Barium with suspected perforation
Chest CT

Tx
Conservative initially: NPO, PPI, IV abx
Surgical indications?
Hemodynamic instability, deterioration despite conservative management

21 y/o college student was out at last night for their birthday. Several episodes of vomiting. Noticed hematemesis with last episode, severe retrosternal pain. No crepitus or subQ emphysema on exam.
Dx?
Mallory Weiss tear
Tests?
EGD (gold standard)
Tx
Antiemetic
PPI

60 year old w/ halitosis. Barium esophagram shown below



https://radiopaedia.org/

Dx
Zenker diverticulum
Pathophys
weak point in the muscular wall of the esophagus between the thyropharyngeal and cricopharyngeal parts of the pharyngeal constrictors
Tx
Surgery indicated for symptomatic
Endoscopy vs open

51 yo male w/ chest pain, nighttime cough, hoarseness, dental erosions. Dx?
GERD
Classic clinical presentation
Epigastric pain, dyspepsia, dysphagia, regurgitation, retrosternal pain

Risk factors
Smoking, obesity, pregnancy, stress
Tests
Clinical, 24 intraesophageal pH monitoring (gold standard)
Management
Lifestyle changes, PPI/H2 receptor blocker

Same patient did not improve with PPI, has had symptoms for years.
Next steps?
EGD
Biopsy shows metaplastic columnar epithelium with goblet cells
Barrett esophagus

Patient with hx of GERD now has dysphagia with solid foods. Dx?

Esophageal stricture (Schatzki's ring)

Patient with hx of GERD now has dysphagia, odynophagia, anemia, weight loss. Dx?
Esophageal adenocarcinoma
Risks
GERD, Barret esophagus, smoking
Tests
EGD, Barium swallow
CT for staging
Tx
Chemoradiation, surgical resection

Patient with hx of alcohol use disorder now has dysphagia, odynophagia, anemia, weight loss. Dx?
Esophageal squamous cell carcinoma
Risks
Alcohol, smoking, HPV

Child with stridor, wheezing, dysphagia with solid foods.
Dx?
Vascular ring

Gastroesophageal junction

51 year old progressive dysphagia to solids and liquids. Birds beak sign on barium swallow.

Dx

Achalasia

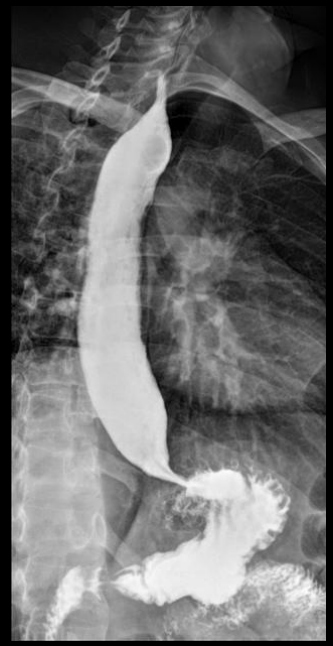
Pathophys

Atrophy of inhibitory neurons in myenteric plexus (Auerbach plexus)

Tx

Scope in ALL patients to rule out pseudoachalasia, manometry is gold standard dx test

Dilatation, Heller myotomy, botulism for nonsurgical candidates



Niknejad M, Achalasia. Case study, Radiopaedia. https://doi.org/10.53347/rID-89229

Something in the Stomach

51 yo woman with hx of significant alcohol use and severe knee arthritis. Presents with epigastric pain and dyspepsia

Dx

Acute gastritis

Test/Tx

NSAID and alcohol cessation. Trial PPI. If no improvement further workup

51 yo woman immigrated from Mexico 6 years ago. Presents with epigastric pain. Trial of PPI provides limited benefit

Dx

H. Pylori gastritis

Classic anatomical region

Stomach antrum

Tests

Urea breath test, EGD

Tx

PPI, Amoxicillin, Macrolide (clarithryomycin)

51 yo woman with epigastric pain. Exam demonstrates peripheral neuropathy. Hgb 10.1, MCV 110.

Dx

Atrophic gastritis (autoimmune gastritis)

Pathophys

Fundus of the stomach. Destruction of parietal cells (no intrinsic factor)

39 yo male presents with gnawing epigastric pain. He states the pain is worse after meals.

Dx

Peptic ulcer (gastric)

Risks

H. Pylori, NSAID

Test

EGD – biopsy is necessary in gastric ulcers due to risk of assoc. malignancy

39 yo male presents with gnawing epigastric pain. He states the pain improves after meals.

Dx

Duodenal ulcer

Risks

More often associated w/ H. Pylori. Much lower risk of assoc. malignancy

39 yo male with gnawing epigastric pain. EGD reveals multiple Jejunal ulcers. Dx?

Gastrinoma (Zollinger Ellison)

Pathophys

Hypergastrinemia – stimulation of parietal cells – increased acid

Confirmatory Tests

Serum gastrin - >1000

Secretin stimulation test (secretin should inhibit gastrin secretion)